

**MATERNAL AND NEONATAL HEALTH IN SOUTH
KALIMANTAN, INDONESIA: LINKED RESULTS FROM
THE 1996 AND 1999 COMMUNITY SURVEYS**

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SUMMARY

This report presents results from the two community surveys conducted in 1996 to 1999 as part of the evaluation of the MotherCare program in South Kalimantan,. The focus is principally on changes between the responses concerning safe motherhood, knowledge, sources of knowledge and use of health facilities and of the services of health service personnel in the most recent birth. The coverage in the surveys of knowledge of anaemia, iron tablet use, and haemoglobin levels are not reported here.

The composition of the samples in both surveys was broadly similar in socio-economic and personal characteristics.

There was no detectable change in the percentage of births in facilities or by home delivery. However, there were marked increases in the presence of professional attendants at home delivery which rose to 52.9% of all home births in 1999, with a corresponding fall in home deliveries with neither a professional attendant nor a TBA present. Correspondingly, there was an increase in the percentage of births professionally attended (home births with a professional plus all facility births, from 37.5% to 58.6%. The strongest increase was in home deliveries with a village-based midwife (Bidan di desa) present, and a large part of this increase was in deliveries where a Bidan di desa and a TBA were both reported. These trends tended to be stronger in Hulu Sungai Selatan (HSS) district where MotherCare focused most intensely. The possibility that some of these increases may have been artificially due to a stronger tendency to report persons present in the second survey, is counter-indicated by no similar trends in persons reported present at facility births. In facility births, the principal attendants reported were midwives (Bidan).

The overall Caesarean section rates were low in both surveys, at 1.8% and 1.1%, though the apparent fall is not statistically significant.

Postpartum visiting by Bidan and/or Bidan di desa became much more common over the 3 years, with almost 3/4 of mothers being visited at home and 53.1% being visited at the time of the birth or soon after.

Contingency planning for the birth was shown to be moderately common in HSS district in the 1999 survey, with about one fifth of respondents reporting they had discussed plans with the Bidan di desa and about a quarter with their husbands. It was much less common in the other two districts of MotherCare's intervention. There was little change in the knowledge and rating of local hospitals between the two surveys, with about three-quarters able to correctly name a hospital (public or private).

There was improvement in the ability to name important pregnancy danger signs unprompted, but overall awareness was not high. The role of the Bidan di desa as a (quoted) source of information increased, though less in Banjar district, and there was a corresponding fall in the perceived role of the posyandu (village health post).

Overall, there is evidence from these surveys of greater involvement by the Bidan di desa in maternity care and as a source of information.

INTRODUCTION

As part of the evaluation and monitoring of the MotherCare program in South Kalimantan, two community-based random sample surveys were conducted one in 1996 (the pre-intervention baseline survey) and the post-intervention survey in 1999. These surveys covered aspects of knowledge and opinions regarding local services and safe motherhood, information concerning iron tablets obtained and consumed and haemoglobin among pregnant women.

This report covers the results of the 1999 survey, focussing chiefly on changes from 1996, in areas relating to safe motherhood and use of services for delivery. It does not cover matters related to anaemia, use and knowledge of iron tablets and haemoglobin levels.

A report on the 1996 baseline survey has already been prepared and gives information on the survey design, sampling procedures etc. The 1999 survey was conducted with a similar design in the same survey clusters. Summary details are as follows.

Coverage of this report

This report covers the principal results from analysis of data from the two surveys jointly in the areas of use of services and service personnel for the birth and postpartum period, contingency planning, knowledge and rating of local hospitals, knowledge of danger signs in pregnancy, and sources of information. The principal objective is to illustrate evidence for change, or lack of evidence of change, over time and between areas where these are pertinent to the MotherCare interventions. It should be pointed out that the original survey design did not include planning for area comparisons, so the statistical power is more limited for these. Not every question in these subject areas is reported, and further tabulations can be provided on request.

Samples

In the 1996 survey, different types of respondents were selected from the households in a series of villages and census areas (*wilcah*). These were:

1. Women who had given birth within the previous three years, for questions related to experiences of the pregnancy (including antenatal care and iron tablet use), birth and the post-partum period for these “index” births. This sample included approximately 1200 women; approximately 480 of these had given birth in the previous year.
2. Currently pregnant women, for information on iron tablet knowledge and use and on current anthropometry and haemoglobin level. This sample included approximately 450 women (approximately 410 for anthropometry and haemoglobin). In some villages, a second *wilcah* was included to permit the planned sample size to be achieved.
3. A combined group consisting of (a) a sub-sample of approximately 400 of the women who had delivered in the last three years from sample 1; (b) all the

currently pregnant women under 2; (c) a sample of approximately 280 women who were not pregnant and had not given birth in the previous three years.

4. A sample of approximately 460 husbands of other women of reproductive age.

In the 1999 survey, two samples were selected from the same villages as the 1996 survey¹. They comprised the following two groups: -

1. Women who had given birth in the previous year; the “post-partum” women, (approximately 800).
2. Currently pregnant women, (approximately 500).

In the 1996 survey, respondents first contacted in all the houses in the selected *wilcah* were interviewed to arrive at an overall census of these *wilcah*. In the 1999 survey, the houses were screened more rapidly for the presence of women in the two target groups, to facilitate less laborious fieldwork. In both surveys a second *wilcah* was selected in some villages to enable the sample size to be achieved; in 1996 this was necessary only for the sample of currently pregnant women, while in 1999 it was sometimes necessary for the sample of women with a recent birth as well.

The planning of sample size for the 1996 survey is outlined in the baseline report. In the 1999 survey, it was planned to include approximately the same number of currently pregnant women; and double the number of women with a delivery in the previous one year.

In this report, the respondents group (c) in sample (3) in the 1996 survey are omitted to give greater comparability with the 1999 survey respondents. Thus, 1996 results in this report that concern knowledge etc are not the same as the results in the baseline report.

Questionnaires

The questionnaires for the 1996 survey were attached as an appendix to the full report of that survey. There were a number of questionnaire modules, different ones given to the different types of respondent. The 1999 survey questionnaires were more simple, with one module for each type of respondent (pregnant women and women with a recent birth). The questions here were of two broad types, (a) those reproduced from the baseline survey, where the change in a response was of interest, and (b) those relating to aspects of the interventions that were not foreseen when the baseline survey was planned (late 1995 / early 1996). Most of the latter were in the sections relating to iron tablets and anaemia.

Statistical Methods

All the percentages presented in this report are weighted to allow for the different sampling frequencies between the two surveys, between the areas and between types of respondents. The denominators (the numbers of respondents) are however not weighted to indicate

¹ In one sub-district in Barito Kuala district, the original villages were not re-sampled, and were replaced by neighbouring villages.

population numbers, but are given as actual numbers of respondents to give an impression of these amounts.

Statistical testing of differences and contrasts between percentages were carried out by logistic regression, with allowance for weighting and for survey clustering. As far as possible, statements of statistical significance were produced sparingly to reduce the problems of multiple comparisons.

All results were produced using the “svy” commands in Stata, to permit the production of weighted results and the allowance for clustering in statements of statistical significance.

1 PRINCIPAL HOUSEHOLD AND PERSONAL CHARACTERISTICS

The purpose of tabulating these is not to assess population changes in the characteristics that follow, but rather to check for comparability of differences between the samples in the two surveys.

Table 1.1: Principal Household Language

Area	survey	n	Principal language (percentage of households)			
			Banjar (%)	Bakunpai (%)	Javanese (%)	Indonesian (%)
Barito Kuala	1996	243	61.6	15.7	16.0	7.7
	1999	371	72.3	15.7	10.1	1.4
HSS	1996	246	99.6	0.0	0.0	0.4
	1999	320	99.6	0.0	0.0	0.4
Banjar, rural	1996	248	94.1	0.4	4.3	4.3
	1999	394	91.8	0.0	2.1	5.8
Banjar, urban	1996	146	81.5	0.0	8.9	12.3
	1999	263	86.9	0.0	6.2	6.9
All	1996	885	85.4	4.2	7.0	5.3
	1999	1328	87.7	4.1	4.3	3.6

There was little change between the surveys; there were somewhat less Indonesian-speaking households in the second survey, but the percentage using this language is not large in either survey.

Table 1.2: Household Possession of Selected Items

Area	survey	n	Percentage of households possessing				
			Radio (%)	TV (%)	Fridge (%)	Bicycle (%)	M/Cycle (%)
Rural	1996	739	66.5	49.6	4.0	67.6	19.7
	1999	1085	66.2	53.4	9.1	57.9	24.4
Urban	1996	146	69.6	80.5	20.0	60.6	38.2
	1999	263	75.0	80.3	25.5	51.7	48.2
All	1996	885	66.9	53.4	5.9	66.7	21.9
	1999	1328	67.3	56.6	11.1	57.1	27.3

Again, there was not a great deal of change between the surveys. The sample in the second survey may have been somewhat better off, with some tendency for more possession of the key items listed, except for bicycles. There is no sign of impact of the economic downturn, but to assess this was not an objective of the survey and information from other sources would be more appropriate.

Table 1.3: Personal Characteristics of Respondents

Characteristic	Survey	
	1996	1999
	N=1659 (%)	N=1348 (%)
Residence		
rural	87.8	88.0
urban	12.2	12.0
Age		
15-19	5.9	9.1
20-24	28.4	30.9
25-29	27.0	27.6
30-34	20.1	18.7
35-39	12.8	10.6
40-44	4.7	3.0
45-49	0.7	0.0
not stated	0.4	0.1
mean age	27.8	27.0
Live births		
0	9.6	15.4
1	32.0	35.6
2-3	36.8	33.1
4+	21.6	15.9

Unable to read	12.3	8.5
Education		
none / some primary	39.3	33.5
primary complete	32.1	33.0
secondary+	28.7	33.5

The age distributions were very similar. Women sampled in the second survey appear to have had lower numbers of live births, but the different relative balance between pregnant women and women with a recent birth may in part account for this. The education levels were very slightly higher in the second survey.

2. PLACE OF DELIVERY AND BIRTH ASSISTANTS PRESENT

The samples here include women with a birth in the previous three years in the 1996 survey and those reporting a birth in the previous one year in the 1999 survey. Results relate to the most recent birth.

Table 2.1: Distribution of Reported Places of Birth, by Survey²

Survey	n	Reported Place of the Birth					
		Hospital (%)	Puskesmas (%)	Private clinic (%)	Own home (%)	Relative's home (%)	Other (%)
1996	1203	7.8	0.1	2.4	82.1	5.3	2.2
1999	833	10.3	0.5	1.3	80.1	6.8	1.0

Home birth was dominant in both surveys. None of the changes over time are statistically significant.

Table 2.2 Percentage of Births in a Health Facility, (hospital, puskesmas or private clinic) by Area

Area	survey	n	Birth reported in health facility (%)
Barito Kuala	1996	335	6.9
	1999	225	4.9
HSS	1996	328	7.3
	1999	191	9.4

² There was a minor change in “facility” versus “home” as a place of birth between the baseline report and this report. The category “Bidan’s home” was included in facilities in the baseline report, but is included in the category home here. The number of births is small, but there are some slight changes in the baseline percentages.

Banjar, all	1996	540	13.3
	1999	417	16.8
Banjar, rural	1996	338	5.3
	1999	224	9.4
Banjar,urban	1996	202	39.6
	1999	173	41.0
All areas	1996	1203	10.4
	1999	833	12.1

The proportions of births in facilities were uniformly low, though higher in the small urban area. The changes between the surveys are not consistent between the areas, and none are statistically significant. The hospital registers do not show any consistent trends in admissions for delivery. It is reasonable to conclude that the underlying proportion seeking facility (chiefly hospital) delivery for their births changed little or not at all over the period. (Note: - the definition of health facility here is slightly different from that used in the baseline survey report, in which “Bidan’s home” was included in this category).

2.1 BIRTH ATTENDANTS AT HOME DELIVERY

Home being the major place of birth, an important feature is who was or were the birth attendant(s). Although the questionnaire attempted to distinguish between the person directly assisting the delivery, and other persons (professional or otherwise) present, getting at this distinction in the replies does not appear to have been completely successful. The following tables focus on which types of persons were reported by the woman respondent as being present at her birth, whether reported as “present” or “delivering”.

Table 2.1.1: Persons Reported Present at the Delivery, by Type of Person, Area and Survey.

Area	Survey	No. of respondents	Percentage reporting the presence of					
			Doctor (%)	Bidan (%)	Bidan di desa (%)	Any professional (%)	TBA (dukun) (%)	None of these (%)
Barito Kuala	1996	312	10.9	16.0	10.3	36.9	48.7	14.7
	1999	214	0.0	24.8	31.8	52.8	60.3	7.5
HSS	1996	304	8.2	12.2	6.3	26.6	63.8	10.9
	1999	173	1.2	25.4	46.8	61.8	67.1	1.7
Banjar, all	1996	442	6.8	12.9	8.4	28.2	44.8	27.1
	1999	323	0.0	31.7	20.3	49.2	64.8	1.7
Banjar, rural	1996	320	6.8	8.4	7.2	22.5	48.1	29.4
	1999	221	0.0	24.0	22.2	43.9	71.0	1.8
Banjar, urban	1996	122	6.6	36.1	14.8	57.4	27.0	16.4
	1999	102	0.0	70.6	10.8	76.5	32.4	0.9
All areas	1996	1058	8.2	13.6	8.5	30.2	49.8	20.4
	1999	710	0.2	28.3	29.2	52.9	63.9	3.4

Note: percentages can add to more than 100%, because more than one person could be reported present.

There were marked increases in the different types of attendant, except for doctors. With the exception of doctors, this corresponds to a marked increase in the number of births for which more than one person was reported as present. Although the questions asked (“who was present” and “who delivered”) were the same in both surveys and given in the same order, the questionnaires were different in other respects and there may have been an upward drift in reporting more than one person when more than one was actually there, possibly arising from a tendency to under-report more than one in the 1996 survey. However, the increases are sharp enough that it is reasonable to deduce a real upward trend. (See also the remarks about changes for facility deliveries, in the next section). The groups of persons most commonly reported are shown later, in Table 2.1.3.

Involvement in home birth by the Bidan di desa is particularly of interest, and shows the largest proportionate increase of all the providers. It was most marked in HSS district, where the MotherCare training program was most complete. The increase for Bidan di desa was greater in HSS than the increase in any other area. This contrast is statistically significant for HSS versus Banjar ($p=0.006$ for Banjar as a whole and $p=0.02$ for Banjar rural), though not for HSS versus Barito Kuala. This demonstration of a larger increase in HSS over the other areas gives evidence of an increase in HSS beyond any changes in reporting bias between the surveys, such as the one discussed above, because other areas are being used as “controls” for HSS.

It is of interest that the percentage mentioning a TBA (dukun) present increased. The role of the TBA certainly does not appear to have become any less. But table 2.1.3 (below) will show an increase in the number of births for which TBA and a health professional were reported present. It is also of interest that the percentage of births with neither a health professional nor a TBA reported present fell strongly. These births were typically assisted by a relative, husband or the woman herself.

The three year recall period up to the 1996 survey covered the time when Bidan di desa were not appointed to all villages; thus the percentage of births where they were mentioned as present may be deflated because a local Bidan di desa may not always have been available. If this factor had a strong effect, it should show as a change between births only one year prior to the survey, and those longer ago. The 1996 results are therefore presented again with this division being made, in Table 2.1.2. This table shows all types of persons present, as well as Bidan di desa.

Table 2.1.2: Persons reported present at the delivery in the 1996 survey, by type of person, area and time from the birth to the survey.

Area	Recall	n	Percentage reporting the presence of					
			Doctor (%)	Bidan (%)	Bidan di desa (%)	Any professional (%)	TBA (dukun) (%)	None of these (%)
Barito Kuala	up to 1 yr.	113	8.8	15.0	10.6	34.5	50.4	15.0
	> than a year	199	12.1	16.6	10.1	38.2	47.7	14.6
HSS	up to 1 yr.	133	8.3	13.5	9.8	31.6	60.2	9.0
	> than a year	171	8.2	11.1	3.5	22.8	67.7	12.3
Banjar, all	up to 1 yr.	179	4.8	14.6	8.3	27.7	44.4	27.9
	> than a year	263	8.3	11.7	8.5	28.5	44.9	26.8
Banjar, rural	up to 1 yr.	136	4.4	10.3	7.4	22.1	47.8	30.1
	> than a year	184	8.7	7.1	7.1	22.8	48.4	28.8
Banjar, urban	up to 1 yr.	43	7.0	41.9	14.0	62.8	23.3	14.0
	> than a year	79	6.3	32.9	15.2	54.4	29.1	17.7
All areas	up to 1 yr.	425	6.6	14.5	9.2	30.3	49.5	20.4
	> than a year	633	9.4	13.0	8.0	30.2	50.1	20.3

Note: - percentages can add to more than 100%, because more than one person could be reported present.

These results do not suggest any strong increase in Bidan di desa presence with time, except perhaps in HSS. It is possible that using three year recall data slightly understates use of the services of local Bidan di desa, perhaps more in HSS than the other areas. However, three-year recall is presented in the principal tables.

Table 2.1.2 also suggests that the decrease in the involvement of doctors in home births, seen in Table 2.1.1, may have begun before the 1996 survey, as a decline is seen in this table. Table 2.1.3 shows the breakdown of birth attendants in terms of births where only one attendant was reported present and births where different combinations of attendant were reported present.

Table 2.1.3: Persons Reported Present at the Delivery, by Selected Groups of Person, Area and Survey.

Area	Survey	n	Percentage reporting the presence of						
			Doctor only (⁽¹⁾) (%)	Bidan di desa only (%)	TBA only (%)	Bdd & TBA (%)	Bidan & TBA (%)	Bdd, Bidan & TBA (%)	Other (%)
Barito Kuala	1996	312	10.9	9.6	48.4	0.3	0.0	0.0	30.8
	1999	214	0.0	15.0	39.7	13.1	5.6	1.9	24.8
HSS	1996	304	8.2	5.9	62.5	0.3	1.0	0.0	22.0
	1999	173	0.0	13.9	36.4	21.4	6.9	1.7	19.7
Banjar, all	1996	442	6.8	8.4	44.6	0.0	0.1	0.0	40.0
	1999	323	0.0	9.1	49.1	8.5	5.8	1.3	26.2
Banjar, rural	1996	320	6.9	7.2	48.1	0.0	0.0	0.0	37.8
	1999	221	0.0	14.0	54.3	10.0	5.4	1.4	19.0
Banjar, urban	1996	122	6.6	14.8	26.2	0.0	0.8	0.0	51.7
	1999	102	0.0	4.9	22.5	1.0	7.8	1.0	62.7
All areas	1996	1058	8.2	8.2	49.4	0.2	0.3	0.0	33.7
	1999	710	0.0	11.8	43.7	12.5	6.0	1.6	24.4

⁽¹⁾ In 1996, doctors were never reported present with bidan, Bdd or TBA; in 1999, doctors were reported present with these others for only 2 births, in HSS.

The increase in births with a Bidan di desa (Bdd) present can be seen again in these figures. It appears to have been more marked for Bdd with a TBA than for a Bdd alone, and most marked in HSS; the excess of deliveries with the TBA accompanied by a Bdd and/or a Bidan is statistically significant for HSS compared to Banjar ($p=0.005$ compared with all Banjar, and $p=0.02$ compared with Banjar rural) but not quite for HSS compared to Barito Kuala ($p=0.07$).

The percentage of births attended by a TBA alone fell, except in Banjar rural, although the trend was not statistically significant, whereas the percentage with a TBA present with or without others, in Table 2.1.1, tended to rise (here the rise overall is statistically significant, $p=0.03$)

2.2 BIRTH ATTENDANTS AT FACILITY DELIVERIES

The reports of persons present at facility deliveries provide a useful check on the possible reporting biases in who was reported, between the two surveys remarked on above. Table 2.2.1 shows the summary results for all areas combined, for types of attendant, present at all, and various combinations of type of attendant.

Table 2.2.1: Persons Reported Present at Birth, Facility Deliveries

	Survey	
	1996	1999
Number of births	145	123
Reported present at delivery (%)		
doctor	49.1	48.4
bidan	85.9	88.8
Bidan di desa	5.3	6.0
TBA	8.5	3.7
Reported as only one at delivery (%)		
Doctor	8.0	8.7
Bidan	42.7	47.8
Bidan di desa	1.8	0.0
TBA	0.8	0.0
Multiple, reported at delivery (%)		
Doctor & Bidan	36.7	34.2
Doctor & Bdd	1.1	1.0
Doctor & Bidan & Bdd	0.0	1.8
Doctor & TBA	1.1	0.0
doctor & Bidan & TBA	3.5	1.9
all four	0.6	0.9

As may be expected, doctors were reported present far more than for home births. The Bidan seems the most important birth attendant in facilities; Bidan or Bidan di desa were present for 91.2% and 94.8% of births in the two surveys, and Bidan were reported as the only persons present, and thus presumably managing the delivery, for approaching half the births.

There was no sign of any tendency to report more multiple attendance in the second survey. This argues against any significant shift in an artificial tendency to report multiple attendants between the surveys, and adds support for the increase for home births being a genuine trend and not an artifact of changes in survey conduct.

2.3 PROFESSIONAL ATTENDANCE AT BIRTHS AT HOME OR IN A FACILITY

This section combines the deliveries at home with a professional in attendance with all facility deliveries; to give percentages of all births professionally attended. Table 2.3.1 shows the percentages of births. The period of recall for the 1996 survey is the full three years.

Table 2.3.1 Percentage of Births Professionally Attended by Area and Survey

	Professionally attended			
	1996		1999	
	n	%	n	%
Barito Kuala	335	41.2	225	55.1
HSS	328	32.0	191	65.4
Banjar, all	540	37.7	417	57.8
Banjar, rural	338	26.6	244	49.2
Banjar, urban	202	74.3	173	86.2
All	1203	37.5	833	58.6

The overall increase from 37.5% to 58.6% is considerable and statistically significant. The increase appeared largest in HSS, although differences between the areas are not statistically significant.

2.4 CAESAREAN SECTION

The percentages of deliveries by Caesarean section are shown by survey and rural or urban area in Table 2.4.1.

Table 2.4.1 Percentage of Deliveries by Caesarean Section, by Survey and by Rural or Urban Area.

survey		area		Total
		rural	urban	
1996	%	1.5	4.0	1.8
1999	n	660	173	837
	%	0.9	2.3	1.1

Although the Caesarean section rate appears to have fallen, the changes between surveys are not statistically significant, so there is no evidence in these figures of any change over the three years. Percentages between the individual districts are not significantly different and are not shown.

2.5 REASONS GIVEN FOR DELIVERY IN A HEALTH FACILITY

The reasons given for delivery in a health facility (mainly hospital; see above) are shown in Table 2.5.1

Table 2.5.1 Reasons Given for Facility Delivery by Survey. Respondents Delivering in a Health Facility Only

Reasons given	Survey	
	1996	1999
	N=145 (%)	N=123 (%)
delivery problem	30.0	35.0
complication in pregnancy	6.7	11.0
safety	41.1	49.8
service given	19.1	19.2
own or family decision	26.5	21.8
other	8.0	12.8

Respondents could give more than one response, so the percentages add to more than 100% and the reason “own or family decision”, which is a rather different type of response, overlapped the other responses. The changes between the surveys were generally small, and none was statistically significant (this includes the change in “complications in pregnancy” as a reason). Thus, there is no evidence for any underlying change in reasons, in these results.

3. POSTPARTUM HOME VISITING

The questions asked about postpartum visiting in the two surveys were not the same. In the 1996 survey, the question was about any visit by a Bidan di desa during the 40 days seclusion period, without any specification regarding the timing of the visit in that period;. In the 1999 survey, the timing of the (first) visit in relation to the birth by a Bidan (not exclusively a Bidan di desa) was asked, but no maximum time was specified. The results for the two surveys are shown in two separate tables.

Table 3.1 Post-partum visits during seclusion by Bidan di desa-1996 survey

	District					All
	Barito Kuala	HSS	Banjar, All	Banjar rural	Banjar urban	
Number of respondents	335	327	541	339	202	1203
Visited (%)	25.4	35.7	41.8	39.5	49.5	36.2

Table 3.2: Post Partum Visit by Bidan; Timing of First Visit. 1999 Survey

	District					All
	Barito Kuala	HSS	Banjar all	Banjar rural	Banjar urban	
Number of respondents	225	191	417	244	173	833
Visited:-(%)						
At time of birth; Bdd present at birth	19.6	40.9	10.0	11.9	4.0	18.8
At time of birth; Bdd not present at birth	20.4	15.7	31.4	23.4	57.8	25.3
Soon after birth	8.4	10.4	8.7	7.8	11.6	9.0
Between 4 and 6 hours	3.1	2.1	1.8	2.0	1.2	2.2
Between 6 and 12 hours	4.9	0.5	2.5	2.9	1.2	2.7
Longer	20.4	9.9	11.4	13.1	5.8	13.6
Visited (total) (%)	76.9	79.6	65.8	61.1	81.5	71.6
No visits reported (%)	23.1	20.4	34.2	38.9	18.5	28.4

The percentage visited increased strongly between the two surveys, from 36.2% to 71.6% for all areas combined. The true increase may have been smaller if respondents of the first survey distinguished between Bidan and Bidan di desa, and if there was significant visiting by the Bidan. But this is not likely to account for all (if any) of the increase. There are no statistically significant differences between the areas in either survey. The larger percentage of visits made at the time of birth, in the 1999 survey, that were linked to the Bdd present at the birth in HSS reflects the greater participation in home birth by Bidan di desa, shown above.

4. CONTINGENCY PLANNING FOR THE BIRTH

In the 1999 survey both women who had a birth in the previous one year and currently pregnant women, were asked the same questions relating to having seen the “contingency plan” leaflet, and whether they had discussed it with the Bidan di desa and/or with their husbands. There are only small differences between the two groups, and these are not consistently in favour of either group. Table 4.1 shows results for both groups combined.

Table 4.1 Percentages reporting having seen and discussed leaflet

	Have seen leaflet		Have seen leaflet and discussed with Bdd		Have seen leaflet and discussed with husband	
	n	%	n	%	n	%
Barito Kuala	371	16.7	371	6.8	356	8.9
HSS	320	40.8	320	19.8	290	25.7
Banjar, all	657	14.2	657	2.9	626	3.8
Banjar, rural	394	16.2	394	3.6	369	4.5
Banjar, urban	263	7.4	263	0.6	257	1.6
All	1348	20.5	1348	7.5	1272	9.7

Note: - denominators fluctuate on account of “non-response” to some questions

The far higher percentages for HSS are notable and the differences between HSS and the other areas are statistically significant ($p < 0.02$ for “seen leaflet”; $p = 0.005$ for each of “seen and discussed with Bdd or husband”); one can ascribe this to the Bdd training programme. The differences between Barito Kuala and Banjar rural are not statistically significant.

For respondents who had seen the leaflet and discussed it with the Bidan, questions were also asked if they had discussed or received information about hospital delivery, about saving money for the delivery and about getting information for emergency transport. There were 105 women to whom this applied. Of these, 37% had discussed hospital delivery, 78% saving, and 21% transport. 30% had discussed hospital and saving. 11.7% had discussed other matters excluding these subjects.

5. KNOWLEDGE AND OPINION IN RELATION TO HOSPITALS AND SAFE MOTHERHOOD

Respondents in both surveys were asked the same questions relating to the name of the nearest government hospital, to grading it for service in specific circumstances, and for whether the respondent would use it in these circumstances.

Both women with a recent previous birth (1996 the previous 3 years: 1999 the previous one year), and currently pregnant women were asked these questions. Results are given for the two groups combined. Most women correctly named a hospital, not necessarily the closest. A few named a private hospital. These are included in the results presented here. The percentages correctly naming a hospital are given in Table 5.1.1

Table 5.1.1: Percentages Correctly Naming a Hospital, by Survey and Area.

	Correctly naming a hospital			
	1996		1999	
	n	%	n	%
Barito Kuala	253	60.6	371	72.3
HSS	248	53.3	320	61.9
Banjar, all	393	76.2	657	87.4
Banjar, rural	247	74.6	394	86.5
Banjar, urban	146	81.7	263	90.4
All	884	67.3	1348	78.0

Although a greater proportion named a hospital in the second survey, the change is not statistically significant ($p=0.09$). There are differences between the areas, with a higher percentage in both surveys in both parts of Banjar district. The contrast between Banjar and the other two districts together is statistically significant, $p=0.02$. This may correspond to a greater number of hospitals within or close to Banjar district.

Respondents who named a hospital were asked how they would grade the named hospital for use in the case of a complication in pregnancy or delivery. The results among those who correctly named a hospital are given in Table 5.1.2. There were no statistically significant differences in grading between the areas, so the results are shown overall.

Table 5.1.2: Grading of Hospital for Use for a Complication in Pregnancy, by Survey.

Respondents naming a hospital only.

Survey	n	Grading of hospital					Mean score ^(a)	Would Use (%)
		Excellent (4)(%)	Good (3) (%)	Fair (2) (%)	Poor (1) (%)	No view (%)		
1996	580	1.0	67.4	20.5	2.0	9.1	2.74	74.1
1999	1049	1.1	74.6	15.2	1.0	8.2	2.82	78.3

^(a) Average of the numeric grades indicated for excellent, good, fair and poor, excluding those giving no view

The increase in mean score from 1996 to 1999 is statistically significant ($p=0.02$) suggesting a favourable shift in attitudes. However, the shift was not large. It consists chiefly of a small amount of movement from “fair” to “good”. However, there was no significant change in the percentage saying they would use the hospital.

It is risky to interpret the percentages saying they “would use” as indicating these respondents would really use the hospital in the event of a complication. The replies probably indicate more of a general feeling of appropriateness of this action. The absence of evidence of any shift between the surveys should, however, be noted.

Questions were also asked grading the hospital for service for a woman who has to have a baby in hospital. The breakdown of grades was very similar in both surveys and is not shown here.

5.2 Knowledge of danger signs in pregnancy

In the baseline survey, knowledge of danger signs was explored in a variety of questions covering pregnancy, delivery and the post-partum period, the latter for the mother and the baby. In the 1999 survey, knowledge of signs in pregnancy only was covered since IEC in the program had concentrated on this period of risk. Table 5.2.1 shows the percentages naming specific danger signs in pregnancy, through an unprompted question, in each survey.

Table 5.2.1: Percentages Naming Selected Danger Signs during Pregnancy, by survey.

Survey	n	Percentage naming each sign, unprompted				
		Vaginal bleeding (%)	Fainting, fits, convulsions (%)	High fever (%)	Anemia (%)	Baby position (%)
1996	885	7.8	5.3	6.7	22.1	6.6
1999	1348	16.5	6.6	6.0	29.4	14.3

There was a tendency to an increase in these percentages, which attained statistical significance for vaginal bleeding ($p=0.01$) and position of the baby ($p=0.03$). The trend is summarised in Table 5.2.2.

Table 5.2.2 Overall Trends in Replies Concerning the Signs in Table 3.2.1

Survey	n	Percentage naming one or more (%)	Mean number named, among those naming one or more
1996	885	38.6	1.26
1999	1348	51.9	1.40

The increase in the percentage naming at least one of the five signs was statistically significant ($p=0.02$). The increase was similar in each of the districts (not shown in table).

5.3 Sources of information

Respondents were asked to recall when they had received information and where or from whom. Table 5.3.1 lists the sources quoted.

Table 5.3.1 Percentage Reporting They had Received Information about Health and Health Problems in Pregnancy or When Having a Baby, by Year of Survey.

Source	Survey	
	1996	1999
	(n=884) (%)	(n=1360) (%)
Bidan di desa	12.2	40.0
Bidan	28.3	33.1
Doctor	9.6	8.6
Puskesmas	43.4	35.2
Posyandu	35.0	21.8
Relatives or friends	30.0	27.6
Radio	9.5	6.2
TV	20.3	16.4

(Multiple replies possible)

The increase for Bidan di desa was statistically significant ($p < 0.001$). This was also the largest increase, giving evidence of effectiveness of the program of Bidan di desa training. The percentages naming Bidan di desa in the two surveys, by district, were 5.5% and 46.7% in Barito Kuala, 16.4% and 56.6% in HSS, and 13.9% and 24.0% in Banjar. Both rural and urban areas in Banjar showed a small increase, and the smaller increase in Banjar was statistically significant ($p = 0.01$ compared with Barito Kuala and $p = 0.03$ compared with HSS).

The fall for posyandu was also statistically significant ($p = 0.007$). In this case, the fall was largest in Barito Kuala, from 52.4% to 17.7%, compared with HSS (39.5% to 25.8%) and Banjar (24.5% to 22.2%). It seems probable that the rise in numbers regarding the Bidan di desa as a useful source may be mirrored by the fall in posyandu, and since Bidan di desa are involved in posyandu this may be because they became identified personally by the respondents to a greater extent between 1996 and 1999. If so, the results suggest this process for Barito Kuala and HSS, but not for Banjar.

The respondents were also asked which source of information they considered convincing. Results are in Table 5.3.2.

Table 5.3.2 Percentages indicating which sources of information about health and health problems when pregnant or having a baby are “convincing”, by year of survey.

Source	Survey	
	1996	1999
	n=884 (%)	n=1360 (%)
Health service personnel	73.4	86.6
Relatives	7.6	6.0
Friends and neighbours	16.6	14.5
Radio	5.7	3.4
TV	11.1	9.3

(Multiple replies possible)

The overall description “health service personnel” is used because it was the response coded in the 1996 survey. In 1999, division was made into Bidan di desa (44.1%), Bidan (42.2%) and doctor (12.5%). The increase under the heading “health service personnel” is statistically significant ($p=0.001$). There were no clear differences between the districts in this increase.